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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/518,959	12/17/2004	Chikafumi Yokoyama	57993US005	5068
32692	7590	06/12/2006		
3M INNOVATIVE PROPERTIES COMPANY PO BOX 33427 ST. PAUL, MN 55133-3427			EXAMINER AN, SANG WOOK	
			ART UNIT	PAPER NUMBER

1732

DATE MAILED: 06/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/518,959	<b>Applicant(s)</b> YOKOYAMA ET AL.	
	<b>Examiner</b> Sang W. An	<b>Art Unit</b> 1732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 17 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) 1-8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 9-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>12/17/04, 7/25/05</u> | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 1-8, drawn to a flexible mold.

Group II, claim(s) 9-12, drawn to a method of manufacturing a microstructure having a projection pattern having a predetermined shape and a predetermined size on a surface of a substrate.

2. The inventions listed as Groups I and II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: Claim 1 is either obvious over or anticipated by US 2002/0007000. Accordingly, the special technical feature linking the two inventions, a flexible mold, does not provide a contribution over the prior art, and no single general inventive concept exists. Therefore, restriction is proper.

3. During a telephone conversation with Carolyn Fischer on 6/1/2006 a provisional election was made with traverse to prosecute the invention of Group II, claims 9-12. Affirmation of this election must be made by applicant in replying to this Office action. Claims 1-8 withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

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4. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yokoyama et al (20020007000) in view of Teijin LTD (JP 59045107A) and Jeram et al (4340709) and evidenced by Audsley (4929403).

Regarding claim 9, Yokoyama et al teach a method of manufacturing a microstructure having a projection pattern having a predetermined shape and a predetermined size on a surface of a substrate (fig 2d), comprising the steps of: preparing a flexible mold comprising a support made of a material having a tensile strength and a molding layer disposed on said support and having a groove pattern having a shape and a size corresponding to those of said projection pattern on a surface (fig 2b & par 0035) thereof; arranging a curable molding material between said substrate and a molding layer of said mold and filling said molding material into said groove pattern of said mold (fig 2c); curing said molding material and forming a microstructure having said substrate and said projection pattern integrally bonded to said substrate (fig 2c & 2d); and releasing said microstructure from said mold (fig 2e).

However, Yokoyama et al do not teach that the support material has a tensile strength of at least  $5 \text{ kg/mm}^2$  and contain moisture to saturation at a temperature and a relative humidity at the time of use by a humidity absorption treatment applied in advance.

Nevertheless, Teijin LTD teach saturating ethylene terephthalate with saturated/superheated steam (abstract). Therefore it would have been obvious to one having ordinary skill in the art at the time of invention to modify Yokoyama et al's method of manufacturing a microstructure to include a step of humidity absorption treatment/steam treatment. One would have been motivated to do so to prevent the polyester from having increased water content on storage and drying (abstract).

As to the tensile strength of the support material, one having ordinary skill in the art would know that silicon compositions are one of many commonly used materials used to make flexible molds as evidenced in US-4929403 (col 1 lines 26-28). Jeram et al teach that silicon compositions could be cured to have a tensile strength of 770 psi which is at least 5 kg/mm<sup>2</sup> (col 12 lines 35-40). Therefore it would have been obvious to one having ordinary skill in the art at the time of invention to modify Yokoyama et al's method of manufacturing a microstructure to include a flexible mold material having a tensile strength of at least 5 kg/mm<sup>2</sup>. One would have been motivated to do so to create a mold with desired material properties such as flexibility/stretch-ability.

Regarding claim 10, Yokoyama et al teach molding material is photo-curable material (fig 2c).

Regarding claim 11, Yokoyama et al teach microstructure is a back plate for a plasma display panel (par 0019).

Regarding claim 12, Yokoyama et al teach a step of independently arranging a set of address electrodes substantially in parallel with each other while keeping a predetermined gap between them on a surface of said substrate (fig 1, 10 & par 0018).

### ***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sang W. An whose telephone number is (571) 272-1997. The examiner can normally be reached on Mon-Fri 9 AM - 6:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina A. Johnson can be reached on (571)272-1176. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Sang Wook An *SWA*  
Patent Examiner  
Art Unit 1732  
June 5, 2006

*CH*  
CHRISTINA JOHNSON  
PRIMARY EXAMINER  
6/5/06